Plant Pathology Circular No. 46
May 1966

Florida Department of Agriculture
Division of Plant Industry

STROMATINIA DISEASE OF GLADIOLUS

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One of the more serious disease problems of gladiolus is caused by Stromatinia gladioli (Drayt.) Whet. The disease and the causal organism have been recognized as early as 1883 in England and known to occur wherever gladiolus are grown (1). All cultivated varieties appear susceptible to this disease, although there is a difference in degree of susceptibility. The Stromatinia disease was reported occurring in Florida along the Gulf Coast since 1940 (2) and more recently in northern Florida during the 1965-66 growing season. Diseased plants occur sporadically throughout the field, sometimes in groups, interspersed with healthy plants.

The fungus is reported to overwinter in the soil in the form of sclerotia, small, compact black resting bodies, for periods as long as 10 years in the absence of gladiolus (3). The sclerotia are found on infected corms and in the soil, serving as sources of inoculum for successive crops. Excessive moisture or abundant rainfall and cooler temperatures increase the severity of the disease (2). Soil compaction and depth of planting may also be factors of importance.

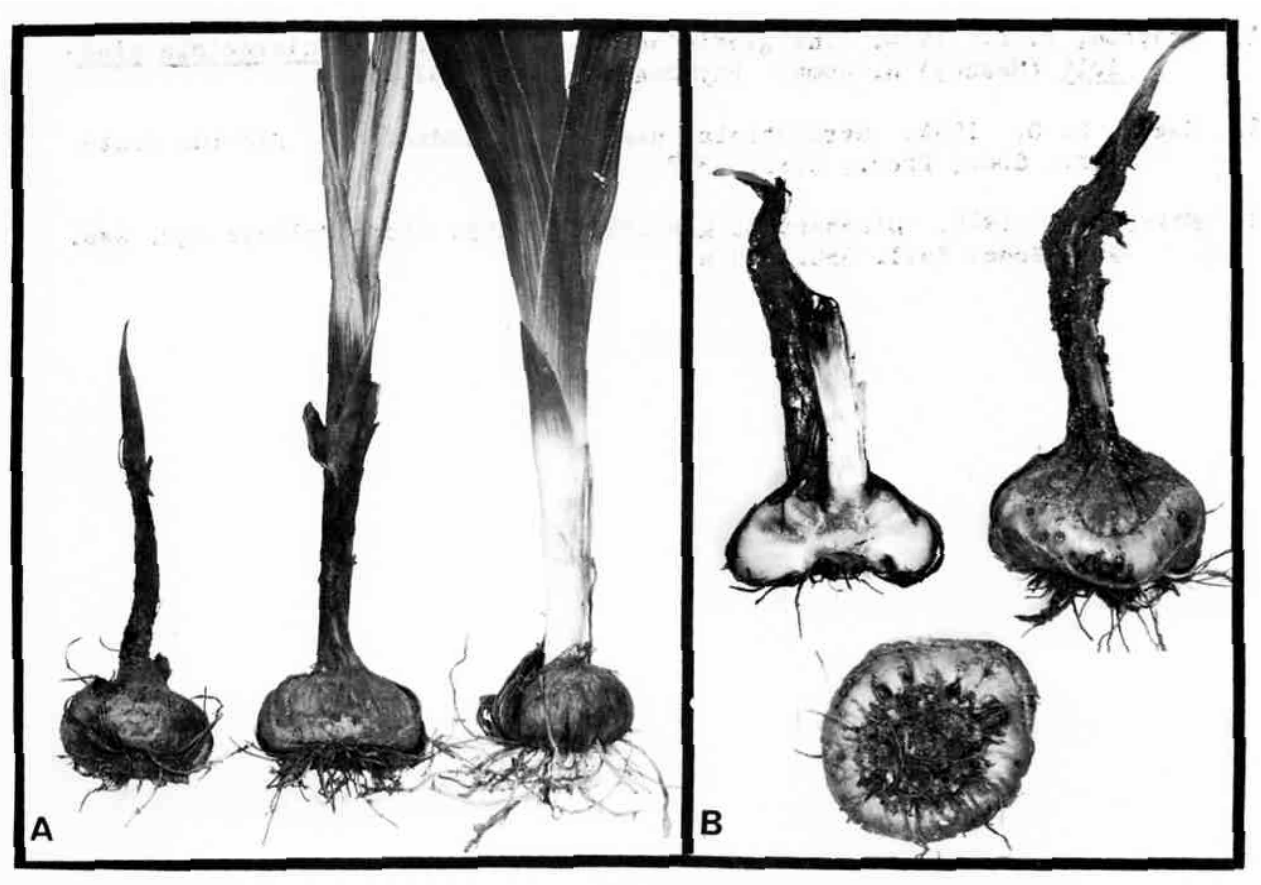

Fig. 1. The Stromatinia disease of gladiolus caused by Stromatinia gladioli (Drayt.) Whet.

SYMPTOMS. Disease symptoms may appear in any of the following forms: dry rot of the corm with superficial small, round, reddish brown lesions having dark brown to black centers, usually appearing at the point of husk attachment (Fig. 1-A); dark colored, brittle and shredded appearance of the husks; root rot, a diagnostic feature (Fig. 1-A) distinguished by the presence of black sclerotia in the loose and easily sloughed cortical tissue of the roots; neck rot characterized by a light brown necrosis turning dark brown, with usually numerous, easily observed sclerotia produced on the dead tissue (Fig. 1-B).

CONTROL. Measures at controlling the Stromatinia disease of gladiolus are achieved with difficulty. Severe losses have been attributed to highly infested fields in relation to inadequate crop rotation. A 3-4 year rotation is generally recommended (2), but this would depend on the level of field infestation and soil treatment. Volunteer gladiolus plants may serve as sources of inoculum and should be eradicated. Irrigation should be adequate but not excessive. Since cool temperatures and abundant moisture influence the severity of the disease, time of planting and drainage of the fields are important considerations. Corm treatment is essential; however, the use of clean "seed" is even more important. Soil treatment with the most effective fungicide cannot be overlooked. Careful consideration should be given to replanting in fields known to have a history of infestation.

Literature Cited

1. Drayton, F. L. 1934. The gladiolus dry rot caused by Sclerotinia gladioli (Massey) n. comb. Phytopathology 24:397-404.

2. Magie, R. O. 1954. Stromatinia disease of gladiolus. Florida State Hort. Soc., Proc., 67:313-317.

3. Nelson, R. 1948. Diseases of gladiolus. Mich. State College Agr. Exp. Sta. Spec. Bull. 350. 63 p.